REMARKS

Pending in the application are claims 1-21, of which claims 1, 20 and 21 are independent. The following comments address all stated grounds for rejection and place the presently pending claims, as identified above, in condition for allowance

Rejections Pursuant to 35 U.S.C. §103

The Examines rejected claims 1-7, 13-15 and 18-21 pursuant to 35 U.S.C. §102, as being unpatentable over U.S. Patent No. 6,240,370 to Sonneland and further in view of Borgos (EAGE 2002). Applicants respectfully traverse these rejections in view of currently amended independent claims 1, 20 and 21. Applicants further submit that said claim amendments are fully supported by the originally filed specification and introduce no new matter.

As currently amended, the present invention disclosed in the present claims recites the identification of a plurality of extrema positions associated with seismic data with sub-sample precision, followed by the derivation of coefficients that characterize the seismic data waveform in the vicinity of the extrema positions from a single extrema data point. The limitation of sub-sample precision was previously found in dependent claim 2, which has now been cancelled. Groups of extrema positions are then formed using a Gaussian statistical model, wherein the derived coefficients are similar. Independent claims 20 and 21 further recite a computer system and computer program in keeping with the means recited in presently amended claim 1. Additionally, aspects claims 1 and 20 have been rewritten for the purpose of clarity to aid in identifying the derivation of coefficients from a single extrema data point.

As submitted previously, Applicants submit that the cited Sonneland reference solely recites the processing of seismic signals which are reflected by a particular subsurface feature by decomposing the reflected signals with respect to a series of polynomial coefficients which characterize the reflectivity of the subsurface feature. As set forth in the present invention, this is one suitable means for the derivation of extrema positions.

Applicants submit that the cited art to Sonneland and Borgos fails to teach or suggest each of the elements of the presently amended claims. In particular, as recited in claim 1, the identification of *extrema position with sub-sample precision*, followed by the derivation of coefficients that characterize the seismic data waveform, *wherein said derived coefficients are derived from a single extrema data point* is neither taught nor suggested by the cited art. As advanced previously, Applicants further submit that the cited art fails to teach or suggest the forming of groups of these extrema positions *using a Gaussian statistical model*, as recited in presently amended claims 1, 20 and 21.

Applicants further submit that those dependent claims, namely 3-7, 13-15 and 18-19, which depend on claim 1 for support, are in condition for allowance by their very nature as dependent claims which further limit independent claim 1. Applicants additionally submit that the elements recited in these independent claims are neither recited nor disclosed by the Sonneland and Borgos references taken either alone or in combination.

In view of the above, Applicants respectfully submit that cited references fail to teach or suggest that which is claimed in present amended independent claims 1, 20 and 21. Applicants therefore request that the Examiner withdraw the aforementioned rejection and pass claims 1, 3-7, 13-15 and 18-21 to allowance.

<u>Conclusion</u>

In view of the above, each of the presently pending claims in this application are believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to pass this application to issue.

Applicant believes no fee is due with this response. However, if a fee is due, please charge our Deposit Account N°. 19-0615, under Order No. 60.1531 from which the undersigned is authorized to draw.

Respectfully submitted,

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